



# Significant BMI Correlations Between Mothers and Offspring: The Fels Longitudinal Study

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## Research Objective

- Investigate the BMI associations between mothers and offspring from birth to age 18

## Introduction

- Parental influence on offspring BMI has been shown to be present at various ages
- There is a stronger maternal than paternal BMI correlation during infancy and early childhood
- Parental obesity is a risk factor for offspring obesity

## Methodology

- The Fels Study began in 1929, observing the growth, maturation, and body composition of its' participants
- The current study sample included 6,263 mother/child pairings

Table 2. Relationships between maternal BMI and son's BMI at each target age

Target Age	N	Spearman Correlation (rho)	Standardized $\beta$ Coefficient
0	177	0.047	0.037
0.5	153	-0.041	-0.038
1	155	-0.072	-0.089
1.5	147	-0.040	-0.069
2	144	-0.038	-0.048
2.5	136	0.056	0.098
3	151	0.075	0.120
4	154	0.055	0.106
5	137	0.171	0.257**
6	148	0.206*	0.310**
7	159	0.207*	0.311**
8	156	0.165	0.293**
9	148	0.221*	0.326**
10	155	0.216*	0.302**
11	150	0.159*	0.251**
12	143	0.220*	0.324**
13	145	0.226*	0.258**
14	148	0.260*	0.355**
15	141	0.275*	0.350**
16	137	0.266*	0.298**
17	137	0.263*	0.224**
18	74	0.264*	0.268**

Table 3. Relationship between maternal BMI and daughter's BMI at each target age

Target Age	N	Spearman Correlation (rho)	Standardized $\beta$ Coefficient
0	178	0.025	0.028
0.5	154	-0.032	0.077
1	155	0.110	0.113
1.5	146	0.176*	0.216**
2	137	0.173	0.248**
2.5	141	0.248*	0.333**
3	145	0.264*	0.317**
4	156	0.338*	0.353**
5	144	0.339*	0.409**
6	143	0.333*	0.414**
7	146	0.390*	0.508**
8	144	0.380*	0.417**
9	142	0.424*	0.564**
10	152	0.402*	0.465**
11	147	0.382*	0.447**
12	138	0.389*	0.382**
13	134	0.366*	0.391**
14	134	0.374*	0.396**
15	115	0.345*	0.266**
16	118	0.272*	0.341**
17	113	0.272*	0.425**
18	66	0.269*	0.461**

## Results

- Mother/son BMI correlations became significant at boys age 5-6 years through age 18
- Mother/daughter correlations became significant at age 1.5 years through age 18

## Conclusion

- Mother/daughter relationship was more strongly correlated than the mother/son, and became significant at an earlier age than boys

